REMARKS

The issues outstanding in the Office Action of June 24, 2009, are the objections to the claims, and the rejections under 35 U.S.C. 112 and 103. Reconsideration of these issues, in view of the following discussion, is respectfully requested.

Claim Objections

Claims 17 and 18 have been objected to under 37 C.F.R. 1.75(c), for failing to further limit the subject matter of previous claims. These claims have been brought into line with claims 1 and 16, and it is submitted that the objections should be withdrawn. The same is respectfully requested. It is moreover noted that the typographical error in claims 17 and 18 noted at page 4 of the Office Action has been corrected.

Rejections Under 35 U.S.C. 112

Claims 17 and 18 have been rejected under 35 U.S.C. 112, second paragraph. It is argued, at page 3 of the Office Action, that there is insufficient antecedent basis for "zinc oxide" in line 2 of these claims. Applicants respectfully disagree, inasmuch as the use of zinc oxide is recited in line 5 of both claims 1 and 16, upon which these claims depend. Accordingly, the rejection is submitted to be in error, and withdrawal thereof is respectfully requested.

Rejections Under 35 U.S.C. 103

Claims 1-4, 6, 7, 12-19 and 21 have been rejected under 35 U.S.C. 103 over Khare '091 taken with newly cited Dodwell. Reconsideration of this rejection is respectfully requested.

Khare discloses a process for producing a sorbent composition, comprising "contacting a zinc component, an aluminum component, and a dispersant component, to form the mixture; and then…spray drying said mixture to form particles; and then…contacting said particles with a zinc compound, wherein said zinc compound is zinc oxide or a compound convertible to zinc oxide, to form a sorbent composition." See the abstract. Patentees note that the zinc component

(apparently in the first contacting step, prior to spray drying) is zinc oxide, but "may be any zinc compound that combines with alumina to form zinc aluminate" and, at column 1, lines 45-52, list a variety of compounds including sulfide, zinc sulfate, zinc hydroxide, zinc carbonate, zinc acetate, zinc nitrate, zinc chloride, zinc bromide, zinc iodide, zinc oxychloride, and zinc stearate. Patentees conclude that "mixtures of such compounds can also be used." See column 1, line 52. At column 2, the paragraph bridging to column 3, patentees teach that the zinc component, alumina component and dispersant component "can be contacted together in any manner known in the art that would form a mixture that is a liquid solution, a slurry, or a paste that is capable of being dispersed in a fluid-like spray." In the examples of the patent, in every one of the nine preparations disclosed in the example 1 or comparative example 2, patentees combine together zinc oxide, alumina and tin oxide in a dry mixing technique prior to spray drying. Zinc nitrate is not employed, and the components are all apparently simultaneously combined with mixing.

In view of the disclosure of Khare, discussed above, it is respectfully submitted that the patent fails to teach a process in which a mixture of zinc oxide, water, nitric acid *and* zinc nitrate are first combined, and subsequently mixed with alumina. See claims 1, 16 and 21, for example. (It is noted that claims 16 and 21, which recite mixing alumina gel "with a mixture of zinc oxide…and…zinc nitrate" clearly require first combining the zinc oxide and nitrates to create the "mixture", prior to introduction of the alumina.

The non-obviousness of the combination of the order of components as stated in the present claims is further evident from the consideration of the examples in the present application. In example 2, a mixture of zinc oxide and zinc nitrate is combined with previously peptized alumina. The resultant material has a crush strength of 0.83. In example 5, example 2 is repeated, but the proportion of the previously combined zinc oxide, zinc nitrate is 50%. A crush strength of 0.91 is achieved. In example 7, a mixture of zinc oxide and zinc nitrate (plus water and nitric acid) is prepared, and subsequently combined with alumina, which is then peptized in situ, rather than previously peptized in examples 2 and 5. A crush strength of 1.05 is achieved. These examples are in accordance with the invention. By contrast, in example 4 the components are combined serially: first alumina is combined with zinc oxide, and then with zinc

nitrate. A low crush strength of 0.43 is achieved. In example 6, alumina is first combined with zinc oxide, and mixed, and zinc nitrate is not employed. A crush strength lower than the examples in accordance with the invention, 0.71, is achieved. Finally, in example 3, even though the materials are combined in an order in accordance with the invention, the calcining step is performed in humid air, contrary to the other examples, and low crush strength is produced. It is noted that the claims have been updated in order to recite calcining in dry air.

It is accordingly respectfully submitted that the examples establish the non-obviousness of the order of the combination of the components of the catalyst of the invention, which order is not suggested by Khare. Moreover, the secondary reference, Dodwell, cited solely to support the argument that formation of a zinc aluminate adsorbent by extrusion of a paste and shaping is known, does nothing to remedy this deficiency. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 5, 10, 11, 14, 15 and 19 have been rejected under 35 U.S.C. 103 over Khare taken with Dodwell and Walker. Reconsideration of this rejection is respectfully requested. The combination of Khare and Dodwell is discussed above. Walker is cited only for its disclosure of the reaction of zinc oxide with aluminum at elevated temperatures, and does nothing to remedy the above-noted deficiencies. Accordingly, withdrawal of this rejection is also respectfully requested.

Claims 8, 9, 14, 15 and 19 have been rejected under 35 U.S.C. 103 over Khare taken with Dodwell and Andersen. Reconsideration of this rejection is also respectfully requested. The deficiencies of Khare and Dodwell, as noted, are discussed above. Andersen is cited solely for its disclosure of the use of pressure in producing extrudates. Accordingly, it does nothing to remedy the above-noted deficiencies, and withdrawal of this rejection is also respectfully requested.

The claims of the application are submitted to be in condition for allowance. However, should the Examiner have any questions or comments, he is cordially invited to telephone the undersigned at the number below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

/Harry B. Shubin/

Harry B. Shubin, Reg. No. 32,004
Attorney/Agent for Applicant(s)

MILLEN, WHITE, ZELANO
& BRANIGAN, P.C.
Arlington Courthouse Plaza 1, Suite 1400
2200 Clarendon Boulevard
Arlington, Virginia 22201
Telephone: (703) 243-6333
Facsimile: (703) 243-6410

Attorney Docket No.: PET-2130

Date: September 24, 2009
HBS/tls